

IN THE CLAIMS:

1-42. Canceled

43. (Previously Presented) A biodegradable moldable resin having a Diels-Alder type functional group having a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, wherein said functional group forms said thermo-reversible cross-linked structure which is covalently bonded at a temperature for use as a molded article and cleaved at temperatures over 120°C and equal to or lower than the molding temperature, and wherein said Diels-Alder type functional group forms the covalent bonds.

44. (Previously Presented) The biodegradable resin according to Claim 43, wherein said Diels-Alder type functional group is at least one group selected from the group consisting of a alkenyl group and group having a conjugated double bond.

45. (Canceled)

46. (Canceled)

47. (Previously Presented) A biodegradable resin having a functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, wherein said biodegradable resin includes polyamino acids having at least one Diels-Alder type functional group selected from the group consisting of an alkenyl group and a group having a conjugated double bond.

48. (Previously Presented) A biodegradable moldable resin having a functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, wherein said biodegradable resin includes polysaccharides having at least one Diels-Alder type functional group selected from the group consisting of an alkenyl group and a group having a conjugated double bond.

49. (Previously Presented) A biodegradable moldable resin having a Diels-Alder type functional group selected from the group consisting of an alkenyl group and a group having a conjugated double bond wherein said biodegradable moldable resin is polylactic acid or modified body of polylactic acid.

50. (Previously Presented) A biodegradable moldable resin having a Diels-Alder type functional group selected from the group consisting of an alkenyl group and a group having a conjugated double bond wherein said biodegradable moldable resin is polybutylene succinate or modified body of the polybutylene succinate.

51. (Previously Presented) The biodegradable moldable resin according to Claim 43, wherein said biodegradable resin has a three-dimensional cross-linked structure, and the cross-linked density of the three-dimensional cross-linked structure is 0.0001 to 1.

52. (Previously Presented) The biodegradable moldable resin according to Claim 43, wherein the main chain of said biodegradable moldable resin has at least one of a linear structure and branched structure.

53. (Previously Presented) The biodegradable moldable resin according to Claim 43, wherein one or more of said functional groups are present at the same site, at least one of the end and side chain of said biodegradable resin.

54. (Previously Presented) The biodegradable moldable resin according to Claim 43, wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

55. (Previously Presented) The biodegradable resin according to Claim 47, wherein said biodegradable resin has a three-dimensional cross-linked structure, and the cross-linked density of the three-dimensional cross-linked structure is 0.0001 to 1.

56. (Previously Presented) The biodegradable resin according to Claim 47, wherein the main chain of said biodegradable resin has at least one of a linear structure and branched structure.

57. (Previously Presented) The biodegradable resin according to Claim 47, wherein one or more of said functional groups are present at the same site, at least one of the end and side chain of said biodegradable resin.

58. (Previously Presented) The biodegradable resin according to Claim 47, wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

59. (Previously Presented) The biodegradable moldable resin according to Claim 48, wherein said biodegradable moldable resin has a three-dimensional cross-linked structure, and the cross-linked density of the three-dimensional cross-linked structure is 0.0001 to 1.

60. (Previously Presented) The biodegradable moldable resin according to Claim 48, wherein the main chain of said biodegradable resin has at least one of a linear structure and branched structure.

61. (Previously Presented) The biodegradable moldable resin according to Claim 48, wherein one or more of said functional groups are present at the same site, at least one of the end and side chain of said biodegradable resin.

62. (Previously Presented) The biodegradable moldable resin according to Claim 48, wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

63. (Previously Presented) The biodegradable moldable resin according to Claim 49, wherein said biodegradable resin has a three-dimensional cross-linked structure, and the cross-linked density of the three-dimensional cross-linked structure is 0.000 1 to 1.

64. (Previously Presented) The biodegradable moldable resin according to Claim 49, wherein the main chain of said biodegradable moldable resin has at least one of a linear structure and branched structure.

65. (Previously Presented) The biodegradable moldable resin according to Claim 49, wherein one or more of said functional groups are present at the same site, at least one of the end and side chain of said biodegradable moldable resin.

66. (Previously Presented) The biodegradable moldable resin according to Claim 49, wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

67. (Previously Presented) The biodegradable moldable resin according to Claim 50, wherein said biodegradable moldable resin has a three-dimensional cross-linked structure, and the cross-linked density of the three-dimensional cross-linked structure is 0.0001 to 1.

68. (Previously Presented) The biodegradable moldable resin according to Claim 50, wherein the main chain of said biodegradable moldable resin has at least one of a linear structure and branched structure.

69. (Previously Presented) The biodegradable moldable resin according to Claim 50, wherein one or more of said functional groups are present at the same site, at least one of the end and side chain of said biodegradable moldable resin.

70. (Previously Presented) The biodegradable moldable resin according to Claim 50, wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

71. (Previously Presented) A biodegradable moldable resin having a Diels-Alder type functional group selected from the group consisting of an alkenyl group and a group having a conjugated double bond wherein an electrostatically bondable and thermo-reversible cross-linked structure is used together.

72. (Canceled)

73. (Canceled)

74. (Previously Presented) The biodegradable moldable resin according to Claim 71, wherein said functional group forms said thermo-reversible cross-linked structure which is covalently bonded at a temperature for use as a molded article and cleaved at temperatures over 120°C and equal to or lower than the molding temperature.

75. (Canceled)

76. (Canceled)

77. (Withdrawn) A biodegradable resin composition comprising a first biodegradable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a second biodegradable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable resin is the biodegradable resin according to Claim 43.

78. (Withdrawn) The biodegradable resin composition according to Claim 77, wherein said first functional group and said second functional group are identical.

79. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a second biodegradable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 47.

80. (Withdrawn) The biodegradable moldable resin composition according to Claim 79, wherein said first functional group and said second functional group are identical.

81. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-

linked structure which is covalently bonded by cooling and cleaved by heating, and a second biodegradable moldable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 48.

82. (Withdrawn) The biodegradable moldable resin composition according to Claim 81, wherein said first functional group and said second functional group are identical.

83. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a second biodegradable moldable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 49.

84. (Withdrawn) The biodegradable moldable resin composition according to Claim 83, wherein said first functional group and said second functional group are identical.

85. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a second

biodegradable moldable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 50.

86. (Withdrawn) The biodegradable moldable resin composition according to Claim 85, wherein said first functional group and said second functional group are identical.

87. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a second biodegradable moldable resin having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 71.

88. (Withdrawn) The biodegradable moldable resin composition according to Claim 87, wherein said first functional group and said second functional group are identical.

89. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked

structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 43.

90. (Withdrawn) The biodegradable moldable resin composition according to Claim 89, wherein said linker has two or more identical second functional groups.

91. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 47.

92. (Withdrawn) The biodegradable moldable resin composition according to Claim 91, wherein said linker has two or more identical second functional groups.

93. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by

heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 48.

94. (Withdrawn) The biodegradable moldable resin composition according to Claim 93, wherein said linker has two or more identical second functional groups.

95. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 49.

96. (Withdrawn) The biodegradable moldable resin composition according to Claim 95, wherein said linker has two or more identical second functional groups.

97. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating,

wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 50.

98. (Withdrawn) The biodegradable moldable resin composition according to Claim 55, wherein said linker has two or more identical second functional groups.

99. (Withdrawn) A biodegradable moldable resin composition comprising a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, and a linker having a second functional group forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 71.

100. (Withdrawn) The biodegradable moldable resin composition according to Claim 99, wherein said linker has two or more identical second functional groups.

101. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin according to Claim 43.

102. (Withdrawn) A biodegradable molded body comprising the biodegradable resin according to Claim 47.

103. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin according to Claim 48.

104. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin according to Claim 49.

105. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin according to Claim 50.

106. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin according to Claim 71.

107. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 77.

108. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 79.

109. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 81.

110. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 83.

111. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 85.

112. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 87.

113. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 89.

114. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 91.

115. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 93.

116. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 95

117. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 97.

118. (Withdrawn) A biodegradable molded body comprising the biodegradable moldable resin composition according to Claim 99.

119. (Withdrawn) A method of producing the biodegradable moldable resin according to Claim 43,

comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable moldable resin material having a site reacting with said third functional group.

120. (Withdrawn) A method of producing the biodegradable resin according to Claim 47, comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable resin material having a site reacting with said third functional group.

121. (Withdrawn) A method of producing the biodegradable moldable resin according to Claim 48, comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable moldable resin material having a site reacting with said third functional group.

122. (Withdrawn) A method of producing the biodegradable moldable resin according to Claim 49, comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable moldable resin material having a site reacting with said third functional group.

123. (Withdrawn) A method of producing the biodegradable moldable resin according to Claim 50, comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable moldable resin material having a site reacting with said third functional group.

124. (Withdrawn) A method of producing the biodegradable moldable resin according to Claim 71, comprising a step of reacting a cross-linking agent having a structure of the covalent bond of a first functional group and a second functional group, which is covalently bonded by cooling and cleaved by heating, and a third functional group, with a biodegradable moldable resin material having a site reacting with said third functional group.

125. (Withdrawn) A method of producing a biodegradable moldable resin comprising a step of cross-linking a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional

group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 43.

126. (Withdrawn) A method of producing a biodegradable resin comprising a step of cross-linking a first biodegradable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable resin is the biodegradable resin according to Claim 47.

127. (Withdrawn) A method of producing a biodegradable moldable resin comprising a step of cross-linking a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable resin according to Claim 48.

128. (Withdrawn) A method of producing a biodegradable moldable resin comprising a step of cross-linking a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a

thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 49.

129. (Withdrawn) A method of producing a biodegradable moldable resin comprising a step of cross-linking a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 50.

130. (Withdrawn) A method of producing a biodegradable moldable resin comprising a step of cross-linking a first biodegradable moldable resin having a first functional group forming a thermo-reversible cross-linked structure which is covalently bonded by cooling and cleaved by heating, with a linker having two or more second functional groups forming a thermo-reversible cross-linked structure which is covalently bonded with said first functional group by cooling and cleaved by heating, wherein said first biodegradable moldable resin is the biodegradable moldable resin according to Claim 71.

131. (Previously Presented) The biodegradable moldable resin of claim 43 wherein the functional group is selected from the group consisting of cyclic dienes and cyclic dienophiles.

132. (Previously Presented) The biodegradable moldable resin of claim 48 wherein the functional group is selected from the group consisting of cyclic dienes and cyclic dienophiles.

133. (Previously Presented) The biodegradable moldable resin of claim 49 wherein the functional group is selected from the group consisting of cyclic dienes and cyclic dienophiles.

134. (Previously Presented) The biodegradable moldable resin of claim 50 wherein the functional group is selected from the group consisting of cyclic dienes and cyclic dienophiles.

135. (Previously Presented) The biodegradable moldable resin of claim 71 wherein the functional group is selected from the group consisting of cyclic dienes and cyclic dienophiles.